

WHAT IS CLAIMED IS:

1. An optical scanning apparatus provided with:
light source means;
deflecting means for deflecting a beam emitted
5 from said light source means; and
a scanning optical system having a plurality of
scanning lenses for directing the beam deflected by
said deflecting means onto a surface to be scanned;
wherein of said plurality of scanning lenses, a
10 first scanning lens nearest to the deflecting means
is such that the shape thereof in a main scanning
cross section is a meniscus shape having positive
refractive power, and satisfies a condition that
$$d1/fm < 0.06,$$

15 where fm is a focal length of said scanning optical
system in the main scanning cross section, and d1 is
a central thickness of the first scanning lens, and a
second scanning lens nearest to the surface to be
scanned is such that in the main scanning cross
20 section, the shape of a light incidence side surface
thereof is an aspherical shape free of an inflection
point or an arcuate shape, and satisfies a condition
that
$$2.5 < |R3/fm|,$$

25 where R3 is a radius of curvature of said light
incidence side surface on an optical axis thereof in
the main scanning cross section.

2. An optical scanning apparatus according to Claim 1, wherein the first scanning lens is such that in a sub-scanning cross section, both surfaces thereof are of a convex shape.

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3. An optical scanning apparatus according to Claim 1, which satisfies a condition that

$$|\beta_s| < 2.5,$$

where β_s is an imaging magnification of said scanning
10 optical system in a sub-scanning cross section.

4. An optical scanning apparatus according to Claim 1, wherein the second scanning lens is of a meniscus shape having its concave surface facing said
15 deflecting means side in a sub-scanning cross section and having positive refractive power.

5. An optical scanning apparatus according to Claim 1, wherein said scanning optical system is
20 designed such that the imaging magnification errors of said plurality of scanning lenses in a sub-scanning cross section are 10% or less.

6. An optical scanning apparatus according to
25 Claim 1, wherein said scanning optical system is comprised of two scanning lenses.

7. An image forming apparatus having an optical scanning apparatus according to any one of Claims 1 to 6, a photosensitive member disposed on said surface to be scanned, a developing device for
5 developing as a toner image an electrostatic latent image formed on said photosensitive member by a light beam scanned by said optical scanning apparatus, a transferring device for transferring the developed toner image to a transferring material, and a fixing
10 device for fixing the transferred toner image on the transferring material.

8. An image forming apparatus having an optical scanning apparatus according to any one of Claims 1
15 to 6, and a printer controller for converting code data inputted from an external device into an image signal and inputting it to said optical scanning apparatus.

20 9. A color image forming apparatus having a plurality of image bearing members disposed on the surface to be scanned of an optical scanning apparatus according to any one of Claims 1 to 6 for forming images of different colors.

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10. A color image forming apparatus according to Claim 9, further having a printer controller for

converting a color signal inputted from an external device into image data of different colors and inputting the image data to respective optical scanning apparatuses.